

Serial No. 10/687,864  
Attorney Docket: ARE 0003 PA - 35022/3

### AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the present application.

1. *(currently amended)* A ~~water-based composition for decontamination~~ the neutralization of chemical warfare agents or inactivation of biological warfare agents comprising:

water;

one or more monopersulfate compounds;

one or more carbonate-type buffers, at least one of which is selected from the group consisting of alkali metal and/or alkaline earth metal salt forms of bicarbonate and/or carbonate;  
and

one or more ketones, at least one of said ketones being selected from the group consisting of acetone, 2-butanone, 2-pentanone, 2-hydroxy-4-methyl-2-pentanone, hexafluoroacetone, trifluoroacetone, acetophenone, camphorsulfonic acid, and levulinic acid.

wherein the monopersulfate compound(s) are present in a concentration range of about 0.1-40% w/v, the buffer(s) are present in a concentration range of about 0.05-20% w/v, and the ketone(s) are present in a concentration range of about 0.1-40% v/v; and

wherein the combination of at least one of the monopersulfate compounds and at least one of the ketones generates a dioxirane species suitable for neutralizing chemical warfare agents or inactivating biological warfare agents.

2. *(currently amended)* The ~~water-based composition~~ of claim 1, wherein at least one of the monopersulfate compounds is an alkali metal salt form of monopersulfate.

3. *(canceled)*

4. *(currently amended)* The ~~water-based composition~~ of claim 2, wherein

at least one of the monopersulfate compounds is selected from the group consisting of alkali metal salt forms of peroxymonosulfuric acid alone or in combination with the alkali metal salts of sulfuric or persulfuric acid;

~~at least one of the carbonate-type buffers is selected from the group consisting of alkali metal salt forms of bicarbonate and/or carbonate; and~~

~~at least one of the ketones is selected from the group consisting of one or more of acetone, 2-butanone, 2-pentanone, 2-hydroxy-4-methyl-2-pentanone, hexafluoroacetone, trifluoroacetone, acetophenone, camphorsulfonic acid, and levulinic acid.~~

5. *(canceled)*

6. *(currently amended)* The ~~water-based composition~~ of claims 1, 2, 3 or 4, wherein the monopersulfate compound(s) are present in a concentration range of about 1-20% w/v; the ~~carbonate-type-buffer~~(s) are present in a concentration range of about 0.05-20% w/v; and the ketone(s) are present in a concentration range of about 0.1-20% v/v.

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7. *(currently amended)* The ~~water-based~~ composition of claims 1, 2, 3 or 4, wherein the composition has a pH range between about 5 to about 9.

8. *(currently amended)* A ~~water-based~~ composition for ~~decontamination~~ the neutralization of chemical warfare agents or inactivation of biological warfare agents comprising:

water;

one or more monopersulfate compounds;

one or more ~~carbonate-type~~ buffers, at least one of which is selected from the group consisting of alkali metal and/or alkaline earth metal salt forms of bicarbonate and/or carbonate;

one or more ketones, at least one of said ketones being selected from the group consisting of acetone, 2-butanone, 2-pentanone, 2-hydroxy-4-methyl-2-pentanone, hexafluoroacetone, trifluoroacetone, acetophenone, camphorsulfonic acid, and levulinic acid;

one or more co-solvents; and

one or more surfactant,

wherein the combination of at least one of the monopersulfate compounds and at least one of the ketones generates a dioxirane species suitable for neutralizing chemical warfare agents or inactivating biological warfare agents.

9. *(currently amended)* The ~~water-based~~ composition of claim 8, wherein at least one of the monopersulfate compounds is an alkali metal salt form of monopersulfate.

10. *(canceled)*

11. *(currently amended)* The ~~water-based~~ composition of claim 9, wherein

at least one of the monopersulfate compounds is selected from the group consisting of alkali metal salt forms of peroxymonosulfuric acid alone or in combination with the alkali metal salts of sulfuric or persulfuric acid;

~~at least one of the carbonate-type buffers is selected from the group consisting of alkali metal salt forms of bicarbonate and/or carbonate;~~

~~at least one of the ketones is selected from the group consisting of one or more of acetone, 2-butanone, 2-pentanone, 2-hydroxy-4-methyl-2-pentanone, hexafluoroacetone, trifluoroacetone, acetophenone, camphorsulfonic acid, and levulinic acid;~~

at least one of the co-solvents is selected from the group consisting of acetonitrile, tert-butanol, propylene carbonate, propylene glycol, polypropylene glycol; and

at least one of the surfactants is selected from the group consisting of tetrabutylammonium hydrogen sulfate (TBAHS), cetyltrimethylammonium (CTMA) chloride, and/or Triton-Xoctyl phenol ethoxylate.

12. *(currently amended)* The ~~water-based~~ composition of claims 8, 9, 10 or 11, wherein the monopersulfate compound(s) are present in a concentration range of about 0.1-40% w/v; the ~~carbonate-type~~ buffer(s) are present in a concentration range of about 0.05-20% w/v; the ketone(s) are present in a concentration range of about 0.1-40% v/v; the co-solvent(s) are present

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in a concentration range of about 0.01-40% v/v; the surfactant(s) are present in a concentration range of about 0.01-15% w/v.

13. *(currently amended)* The ~~water-based~~ composition of claims 8, 9, ~~10~~ or 11, wherein the monopersulfate compound(s) are present in a concentration range of about 1-20% w/v; the ~~carbonate-type~~ buffer(s) are present in a concentration range of about 0.05-20% w/v; the ketone(s) are present in a concentration range of about 0.1-20% v/v; the co-solvent(s) are present in a concentration range of about 0.5-20% v/v; and the surfactant(s) are present in a concentration range of about 0.01-5% w/v.

14. *(currently amended)* The ~~water-based~~ composition of claims 8, 9, ~~10~~ or 11, wherein the composition has a pH between about 5 to about 9.

15. *(currently amended)* A ~~water-based~~ composition for ~~decontaminating~~ neutralizing chemical warfare blister and nerve agents comprising:

water;

one or more monopersulfate compounds selected from the group consisting of alkali metal salt forms of peroxymonosulfuric acid alone or in combination with the alkali metal salts of sulfuric or persulfuric acid;

one or more ~~carbonate-type~~ buffers selected from the group consisting of alkali metal and/or alkaline earth metal salt forms of bicarbonate and/or carbonate; and

one or more ketones selected from the group consisting of one or more of acetone, 2-butanone, 2-pentanone, 2-hydroxy-4-methyl-2-pentanone, hexafluoroacetone, trifluoroacetone, acetophenone, camphorsulfonic acid, and levulinic acid,

wherein the monopersulfate compound(s) are present in a concentration range of about 0.1-40% w/v, the buffer(s) are present in a concentration range of about 0.05-20% w/v, and the ketone(s) are present in a concentration range of about 0.1-40% v/v, and

wherein the combination of at least one of the monopersulfate compounds and at least one of the ketones generates a dioxirane species suitable for neutralizing chemical warfare blister and nerve agents.

16. *(currently amended)* A ~~water-based~~ composition for ~~decontaminating~~ inactivating prion, viral, bacterial, fungus, toxins, and spore forming biological agents, comprising:

water;

one or more monopersulfate compounds selected from the group consisting of alkali metal salt forms of peroxymonosulfuric acid alone or in combination with the alkali metal salts of sulfuric or persulfuric acid;

one or more ~~carbonate-type~~ buffers selected from the group consisting of alkali metal and/or alkaline earth metal salt forms of bicarbonate and/or carbonate; and

one or more ketone selected from the group consisting of one or more of acetone, 2-butanone, 2-pentanone, 2-hydroxy-4-methyl-2-pentanone, hexafluoroacetone, trifluoroacetone, acetophenone, camphorsulfonic acid, and levulinic acid,

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wherein the monopersulfate compound(s) are present in a concentration range of about 0.1-40% w/v, the buffer(s) are present in a concentration range of about 0.05-20% w/v, and the ketone(s) are present in a concentration range of about 0.1-40% v/v, and

wherein the combination of at least one of the monopersulfate compounds and at least one of the ketones generates a dioxirane species suitable for inactivating prion, viral, bacterial, fungus, toxins, and spore forming biological agents.

17. *(currently amended)* The ~~water-based~~ composition of claims 15 or 16, wherein the composition has a pH between about 5 to about 9.

18. *(canceled)*

19. *(currently amended)* The ~~water-based~~ composition of claims 15 or 16, wherein the monopersulfate compound(s) are present in water at a concentration range of about 1-20% w/v; the ~~carbonate-type~~ buffer(s) are present in a concentration range of about 0.05-20% w/v; and the ketone(s) are present in a concentration range of about 0.1-20% v/v.

20. *(currently amended)* The ~~water-based~~ composition of claims 15 or 16, further comprising one or more co-solvents selected from the group consisting of acetonitrile, tert-butanol, propylene carbonate, propylene glycol, polypropylene glycol; and

one or more surfactants selected from the group consisting of tetrabutylammonium hydrogen sulfate (TBAHS), cetyltrimethylammonium (CTMA) chloride, and/or ~~Friton-X~~ octyl phenol ethoxylate.

21. *(currently amended)* The ~~water-based~~ composition of claim 20, wherein the composition has a pH between about 5 to about 9.

22. *(currently amended)* The ~~water-based~~ composition of claim 20, wherein the ~~monopersulfate compound(s) are present in a concentration range of about 0.1-40% w/v; the carbonate-type buffer(s) are present in a concentration range of about 0.05-20% w/v; the ketone(s) are present in a concentration range of about 0.1-40% v/v; the co-solvent(s) are present in a concentration range of about 0.01-40% v/v; the surfactant(s) are present in a concentration range of about 0.01-15% w/v.~~

23. *(currently amended)* The ~~water-based~~ composition of claim 20, wherein the monopersulfate compound(s) are present in a concentration range of about 1-20% w/v; the ~~carbonate-type~~ buffer(s) are present in a concentration range of about 0.05-20% w/v; the ketone(s) are present in a concentration range of about 0.1-20% v/v; the co-solvent(s) are present in a concentration range of about 0.5-20% v/v; and the surfactant(s) are present in a concentration range of 0.01-5% w/v.

24. *(withdrawn)* A method for preparing said composition as in claims 1, 2, 3, 4, 15 or 16 comprising the steps of

preparing a first water-based solution comprising the carbonate-type buffer(s) and the monopersulfate compound(s);

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mixing the ketones with said first water-based solution to form a second water-based solution; and

contacting said second water-based solution with materials contaminated by chemical or biological warfare agent(s).

25. *(withdrawn)* A method for preparing said composition as in claims 8, 9, 10 or 11, comprising the steps of

preparing a first water-based solution comprising the carbonate-type buffer(s), the monopersulfate compound(s), the co-solvent(s), and the surfactant(s);

mixing the ketone(s) with said first water-based solution to form a second water-based solution; and

contacting said second water-based solution with materials contaminated by chemical or biological warfare agent(s).

26. *(withdrawn)* A method for preparing said composition as in claim 20, comprising the steps of

preparing a first water-based solution comprising the carbonate-type buffer(s), the monopersulfate compound(s), the co-solvent(s), and the surfactant(s);

mixing the ketone(s) with said first water-based solution to form a second water-based solution; and

contacting said second water-based solution with materials contaminated by chemical or biological warfare agent(s).

27. *(withdrawn)* A method for preparing said composition as in claims 8, 9, 10 or 11, comprising the steps of

preparing a first water-based solution comprising the carbonate-type buffer(s) and the monopersulfate compound(s);

mixing the ketone(s) with said first water-based solution to form a second water-based solution;

mixing the co-solvents and the surfactants to the second water-based solution; and

contacting said second water-based solution with materials contaminated by chemical or biological warfare agent(s).

28. *(withdrawn)* A method for preparing said composition as in claim 20, comprising the steps of

preparing a first water-based solution comprising the carbonate-type buffer(s) and the monopersulfate compound(s);

mixing the ketone(s) with said first water-based solution to form a second water-based solution;

mixing the co-solvent(s) and surfactant(s) to the second water-based solution; and

contacting said second water-based solution with materials contaminated by chemical or biological warfare agent(s).